MOUNT10

Plug-ins

V7 Sailfish R2 User Manual

for Microsoft Windows

Your guide to installing and using MOUNT10 plug-ins.

SWISS DATA BACKUP

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Instruction symbols

The following icons appear in the User Manual:

The information icon precedes important information.

The example icon indicates a practical illustration of a process or procedure.

The hint icon indicates a suggestion or hint to guide or assist you with performing a task.

The warning icon provides a warning against potential mistakes and actions that could cause critical error.

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1. Plug-in Installer

The Plug-in Installer allows you to upgrade existing Server Edition (SE) Backup Clients with added functionality by installing application-specific plug-ins and other monitoring tools. You can update existing plug-ins with this installer. Alternatively, if enabled on the Storage Platform, plug-ins can also be auto-updated during the backup process.

Warnings:

- *If a plug-in has been deprecated, the Backup Client will only be auto-updated to the latest version in which the plug-in was still supported.*
- *If you manually upgrade a Backup Client that contains deprecated plug-ins, these plug-ins will be removed.*

The SE Backup Client must be installed on the computer before you can install any plug-ins. SE plug-ins require working space for the cache and disk space for creating a data dump and patches.

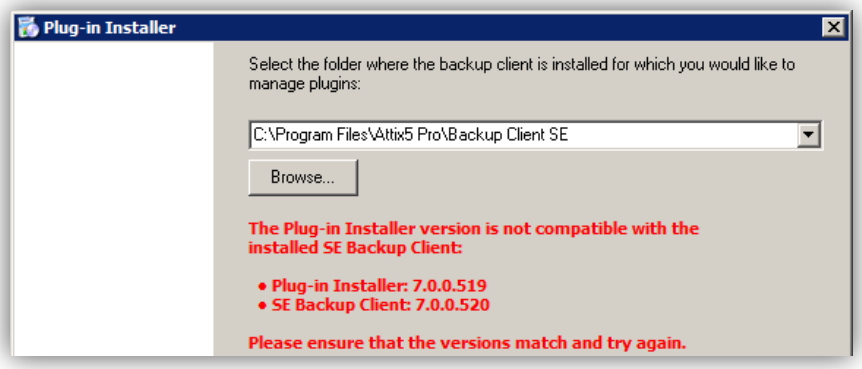
Notes:

- *Ensure that the drive on which the SE Backup Client is installed has enough free hard drive space to store an extra copy of all the selected files. If not, move the **ToBackup**, **Cache** and **dump** folders to another drive.*
- *For certain plug-ins (SIR Plus, VSS etc.), the backup selection size is an estimate only. The true size of the backup is calculated during the backup when the data is dumped and might not match the selection size.*

Installation and configuration

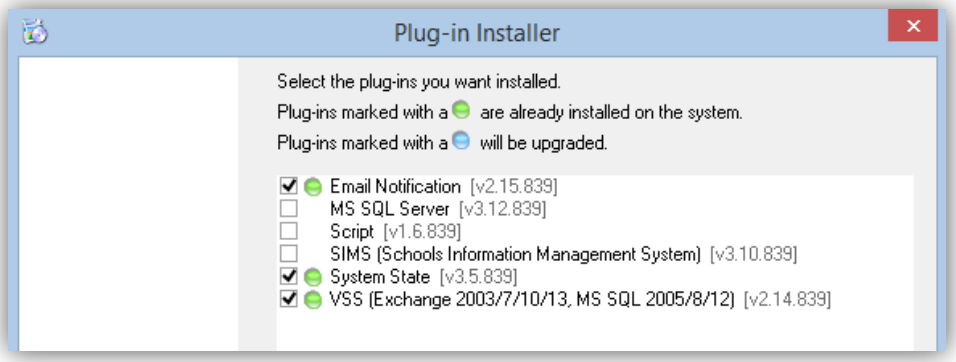
The application that the plug-in will be working on does not have to be installed before installing the SE Backup Client. The installer will detect the current SE Backup Client installation location and confirm it as part of the installation process.

Note: *The Plug-in Installer and SE Backup Client have to be the same version. If this is not the case, a warning will be shown and you will not be able to continue.*


Plug-in Installer
Select the folder where the backup client is installed for which you would like to manage plugins:
C:\Program Files\Attix5 Pro\Backup Client SE
Browse...
The Plug-in Installer version is not compatible with the installed SE Backup Client:
• Plug-in Installer: 7.0.0.519
• SE Backup Client: 7.0.0.520
Please ensure that the versions match and try again.

After ensuring that the Plug-in Installer and SE Backup Client are the same version, simply run the Plug-in Installer executable and supply the necessary information. If the SE Backup Client interface is open, the installer will prompt you to close it. The installer checks various requirements (such as the operating system and MS .NET Framework installation) and adds a note next to the plug-in name should the requirement not be met.

A list of available plug-ins will enable you to select the plug-ins you wish to install and/or configure. Plug-ins marked with a green icon are already installed on the system. Any plug-ins marked with a blue icon will be upgraded to the latest plug-in version.


Plug-in Installer
Select the plug-ins you want installed.
Plug-ins marked with a are already installed on the system.
Plug-ins marked with a will be upgraded.
Email Notification [v2.15.839]
MS SQL Server [v3.12.839]
Script [v1.6.839]
SIMS (Schools Information Management System) [v3.10.839]
System State [v3.5.839]
VSS (Exchange 2003/7/10/13, MS SQL 2005/8/12) [v2.14.839]

Note: *Manually upgrading a tree-based plug-in could result in your backup selection being lost. In that case, follow these steps to restore your backup selection:*

1. *Close the Backup Client*
2. *Stop the Backup Client service*
3. *Browse to the install folder e.g.: C:\Program Files\MOUNT10\Backup Client SE*
4. *Rename the following two files:*
   - *Backupset.xml to* ***Backupset.xml.upgr***
   - *Backupset.xml.0 to* ***Backupset.xml***
5. *Restart the Backup Client service and Backup Client*
6. *Confirm that the selection has been restored*

See the Plug-ins section below for more information on which plug-ins are tree-based.

Select or deselect any of the plug-ins by clicking in the check box next to the plug-in name. After you have made all the necessary changes, click **Next**. The next step in the wizard will display a summary of all the changes that you have requested.

Click **Apply requested changes** to continue with the upgrade or **Back** if you want to modify your selection.

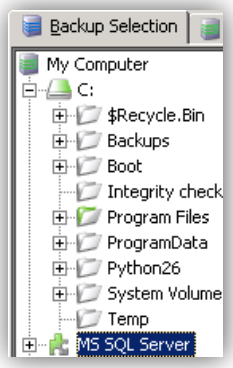
The Plug-in Installer stops the SE Backup Client service, installs/upgrades/uninstalls the selected plug-ins and starts the service again. Click **Finish** to close the application. After installing the plug-ins, open the SE Backup Client and configure the installed plug-ins.

Note: *As a precaution, the Plug-in Installer does not remove the dump folder used by the plug-ins or any plug-in-specific settings when you remove plug-ins. You have to remove them manually if needed.*

2. Plug-ins

Adding to its features and functionality, the SE Backup Client plug-ins provide a solution for numerous databases and applications.

Once installed, plug-ins display in one of two areas of the SE Backup Client application: in the *Backup Selection tree* or in a dedicated *dialog box*. Plug-ins available in the selection tree can be selected/excluded for backup in the same manner as all other items in the tree. Plug-ins available in dialog boxes can be enabled/disabled/configured via the **Tools** menu.



The table below lists the plug-ins supported by the SE Backup Client (in the same order as displayed in the Plug-in Installer's GUI) with the latest version available and the associated ID.

Server Edition plug-ins currently available			
Plug-in name (as listed in Plug-in Installer)	**Description**	**Plug-in ID**	**Backup Client location**
Email Notification	V2.15	19	Dialogue
MS SQL Server	V3.12 (2000/2005/2008/2012)	7	Dialogue
Script	V1.6	20	Dialogue
System State	V3.5 V3.1	36 WSB 25 NTBackup	Dialogue
VSS	V2.14	29	Tree

Note: Only plug-ins in the selection tree can be used in secondary backup sets.

1. Email Notification

The Email Notification plug-in enables you to receive email notification on backup activity. You can configure the plug-in to notify you on a specified email address when a backup has been successful, when it failed or both. The level of information can also be specified.

Note: Please refer to the Server Edition Backup Client User Manual; this plug-in comes standard with every SE Backup Client installation.

Installation

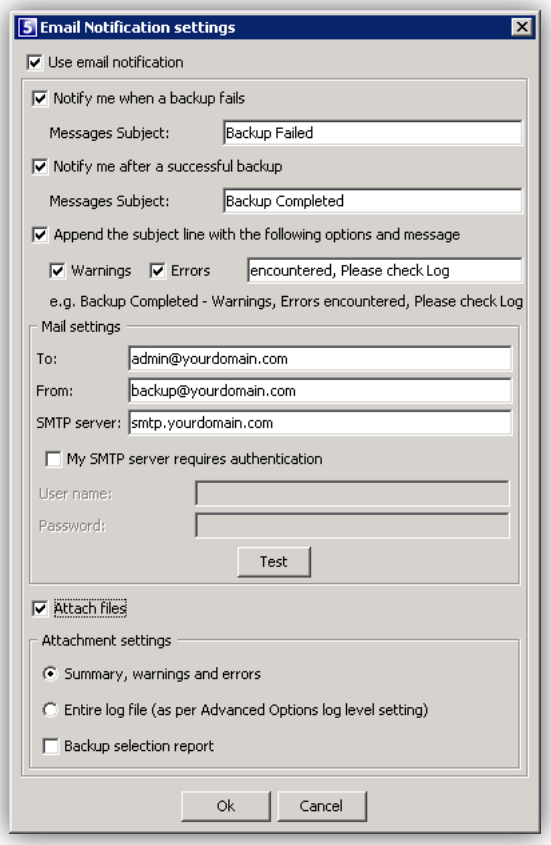
This plug-in has been included in SE installers since v4.2. If it is not installed, run the Plug-in Installer and select the **Email Notification** plug-in.

Note: *The Plug-in Installer will run automatically during the SE Backup Client installation if located in the same folder as the Client MSI.*

Configuration and use

To configure the email notification plug-in:

1. On the **Tools** menu, point to **Plug-ins**, and then click **Email Notification**.
2. Select the **Use email notification** check box to enable the plug-in.
3. Select the types of notifications to be emailed. The following options are available:
    - Notify me when a backup fails
    - Notify me after a successful backup
    - Append the subject line with the following options and message:
        - Warnings
        - Errors



Notes:

- *You can modify the Email subject and content for each of the options by clicking in the relevant message box, and then editing the text.*
- *The Backup Account name is automatically included in the subject, e.g. "Backup Completed [Backup Account name]".*

4. In the Mail settings area, type **To** and **From** email addresses in the fields provided and supply the SMTP server address and authentication information if necessary.

   Tips:

   - *In the **SMTP Server** box, you can specify the SMTP Server name in isolation (e.g. mail.company.com) or you can include the port number (e.g. mail. company.com:80).*
   - *When no port is specified, 25 will be used by default.*

5. Click the **Test** button to verify that the settings are correct. A test email will be sent to the address specified in the **To** field and a message will appear confirming if the email was sent successfully. Click **OK** to close the message and return to the **Email Notification settings** dialog box.
6. Select the **Attach files** check box to include a log file and/or report as attachments.
7. In the Attachment settings area, select from the following options:
   - **Summary, warnings and errors**
   - **Entire log file (as per Advanced Options log level setting)**
   - **Backup selection report** – Provides a summary of the backup selection
8. Click **OK** to save the settings and close the **Email Notification settings** dialog box.

The Email Notification plug-in is now activated and will start emailing reports during the next backup.

2. MS SQL Server

The MOUNT10 MS SQL plug-in provides SQL Server 2012/2008 (including R2)/2005/2000 protection down to the individual table or file group. Execute binary patching backups as well as Transaction Log backups with automatic truncation. Restore options include redirection to another SQL Server using the native SQL restore procedures and the ability to perform "rollback restores", enabling a database to be recovered to a specific backup job.

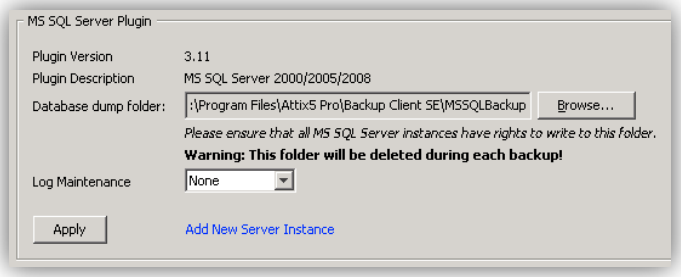
Installation and configuration

Note: It is recommended that MOUNT10 SE and the MS SQL Server plug-in be installed on the actual SQL Server, but ensure that the SQL services are running. However, if MOUNT10 SE and the MS SQL Server plug-in are installed on a remote server, ensure that permissions are correctly set.

Run the Plug-in Installer and select the **MS SQL Server** plug-in to upgrade the SE Backup Client with the MS SQL Server plug-in. After the upgrade, open the MOUNT10 Client. You will notice a new entry on the **Backup Selection** tab, in the left-hand pane, called **MS SQL Server**.

To add and configure a SQL instance click on the MS SQL Server entry:

In the right-hand pane, specify the global database dump folder for the SQL instances in the **MS SQL Server Plugin** section. You can use the **Browse** button to browse to a specific folder.



Warnings:

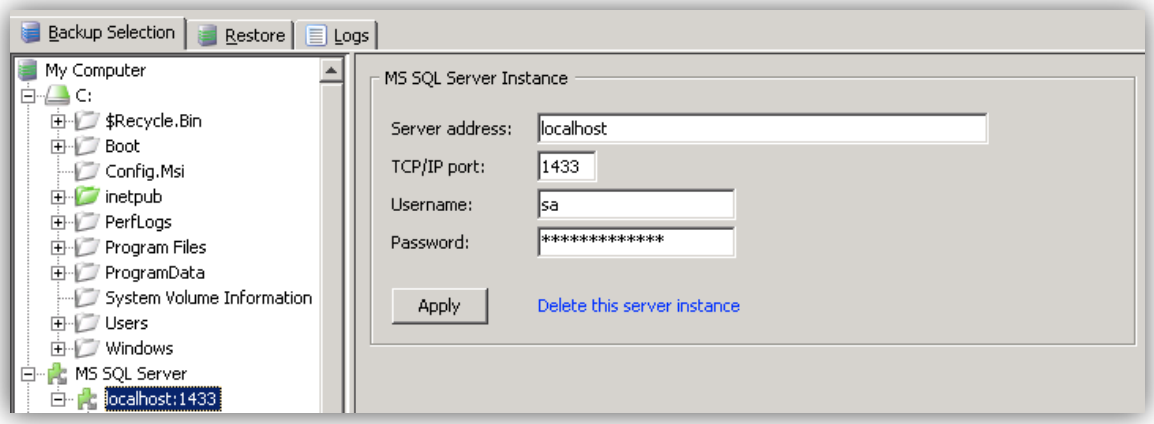
- *Ensure that SQL has sufficient rights to dump the data into the specified folder.*
- *The database dump folder itself is deleted and created again before being used, so if a UNC path is used, the actual dump folder must not be a shared folder (this will cause an access violation).*
  Example: the UNC path should be as follows: \\server\share\dump where dump can be deleted by the user mentioned above. Specifying \\server\share as the dump folder might cause access violations, because the service will then try to delete the share itself.

Notes:

- *Ensure that the server has enough free hard drive space to store a data dump of all the selected databases.*

- *If you chose to to dump the database to any other folder than the default SQL server backup location that is usually ...\MSSQL\Backup, you have to ensure that the user account your SQL server instance is running has full read and write rights in the file system to the plugin dump location.*

Log Maintenance enables you to specify whether the SQL plug-in must truncate the MS SQL logs once the backup has been completed to ensure that the log files will not use unnecessary disk space. Click the **Apply** button to add the first SQL Server instance. A sub-node will be created in the MSSQL Server section in the left-hand pane, as displayed in the image below. Use the MS SQL Server Instance section pane to configure this SQL instance.



MS SQL Server Instance: Last status provides information about the last connection to the SQL Server. Enter the Server address, port, SQL username and password that the SE Backup Client must use to connect to the SQL Server.

Note: You need to manually enable TCP/IP ports in the SQL 2005 Management tools.

Click **Apply**.

The list of the available SQL databases is populated in the left-hand pane as sub-notes of the selected instance, from where you can select the database that you want to backup. If you select the entire section, all databases will be included, as well as any new databases created.

Select the database(s) that you wish to backup. *Backup & Restore operations are not allowed on the tempdb database (SQL-DMO ODBC SQLState: 42000*).

To add another instance, click the **MSSQL Server** entry in the left-hand pane, and then click the **Add new server** button in the right-hand MSSQL Server plug-in section. A new node will be added. Configure the SQL Server settings and select the necessary databases.

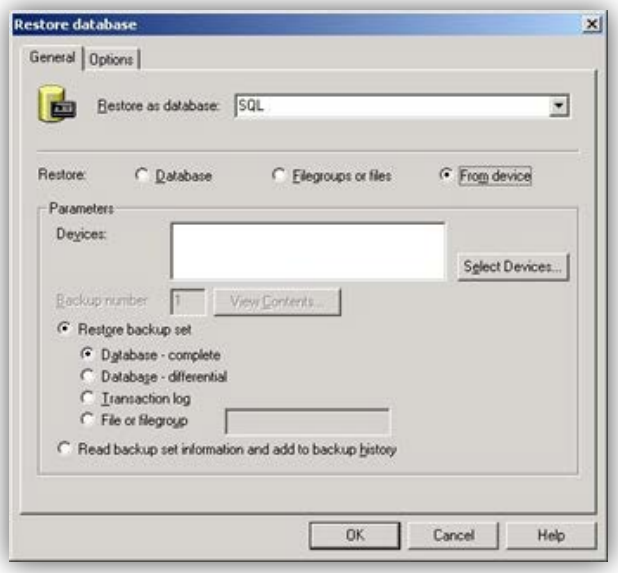
Note: Ensure that you have sufficient rights if protecting a remote server.

Verify that you have included all the required SQL databases in the left-hand pane before you initiate the first backup. To create your first backup, select **Backup Now** on the **File** menu. MOUNT10 will create an exact copy of the selected databases in the dump folder. These files will be compressed and transferred to the Storage Platform. The next backup will compare the selected storage groups with the selection from the previous backup, which is stored in the cache. MOUNT10 will create a patch file for each database. This file consists of all the changes made to the database since the last backup. Only the patch files and any new selections will be backed up.

How to restore a SQL Database from a backup device

The first step is to restore the database from the Storage Platform. Click the **Restore** tab and select the dump folder from the specific backup date. On the **File** menu, click **Restore**. Select a restore location and restore the database.

Open the **SQL Enterprise Manager**. From the Console root, expand Microsoft SQL Servers and browse to the Server where you would like to restore the database. Expand the databases section and select the database that you would like to restore. If the database does not exist anymore, you have to create and configure the database first. Right-click on the database, select **All Tasks** and click **Restore Database.**



In the **Restore as database** window, select the database you wish to restore. Select **From device** and then click **Select Devices**. From the **Restore from** option, select **disk** and then click **Add**. Browse to the folder where you have restored the database and select the file.

Click **OK** to accept the file name selected and **OK** again to accept the device. Using SQL functionality, you can select how you would like to restore the backup set. You can choose between a complete or differential database, the transaction log or file group. If you are restoring to a new database, you need to enable SQL to overwrite the database.

Click **OK** to start restoring the database. SQL Server Enterprise Manager will confirm that you have successfully restored the selected database.

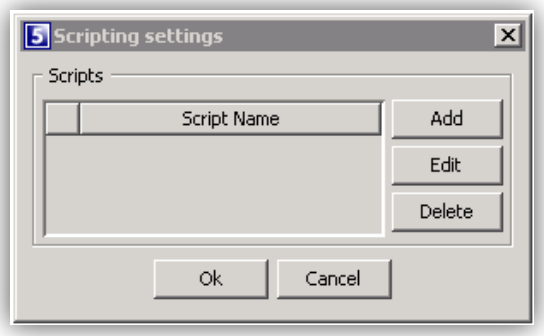
3. Script

The Script plug-in enables you to execute scripts and batch files during the backup process. This allows you to prepare an application for backup and to create a data dump of a database. You can also stop and start applications or services before, during or after any backup.

Installation

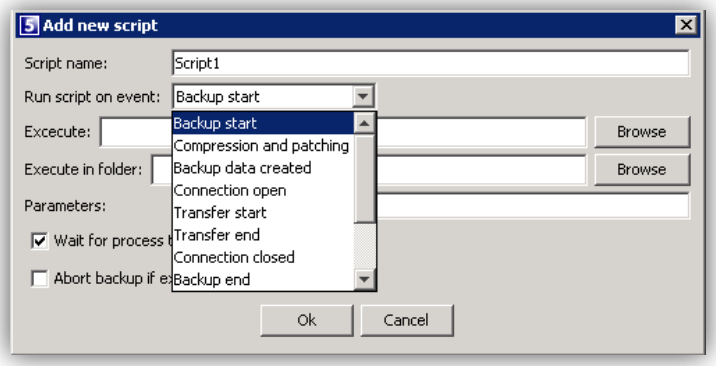
To install the Script plug-in, run the Plug-in Installer and select the **Script** plug-in. After the installation, open the SE Backup Client interface.

Configuration and use



To add scripts, open the **Tools** menu, select **Plug-ins** and click on **Scripting**.

The Scripting settings window allows you to **Add** new and **Edit** or **Delete** existing scripts. Click on **Add** to create a new script.



Start by supplying a Script name and specify when this script should run.

You can choose between:

- Backup/Restore start/end
- Backup data created
- Connection open/closed
- Backup/Restore Transfer start/end

Browse to the application or batch file that should be executed. Supply a location where it should be executed as well as any other **Parameters** needed.

Specify whether you want the SE Backup Client to wait for the process to be completed before continuing with backup process by enabling the check box next to **Wait for process to complete**.

Click **Ok** to save the new script. You can enable/disable scripts by clicking in the check box next to the Script Name. After you have configured all your scripts, click **Ok** to close the Scripting settings window.

4. System State

When the System State plug-in is selected for installation, two plug-ins are actually installed. The plug-in used to perform a System State backup or restore depends on the operating system that it's installed on:

- System State (using WSB) for Windows 2008 and later
- System State (using NTBackup) for operating systems prior to Windows 2008

Notes:

- *The VSS plug-in sometimes picks up a System State writer. This writer is not supported and should not be used. For System State backup and restore, use the System State plug-in.*
- *System State for Windows Server 2008 requires .NET 3.5. System State for Windows Server 2012 requires .NET 4.*

Installation

To install the plug-ins, run the Plug-in Installer and follow the steps outlined below to completion.

Notes:

- *The MOUNT10 Server Edition Client must be installed on the computer before you can install any plug-ins.*
- *SE plug-ins require working space for the cache and disk space for creating a data dump and patches.*

Step 1: Specify Backup Client folder location

1. Ensure that the correct Backup Client folder location is selected. If not, click the **Browse** button, select the correct folder, and then click **OK**.
2. Click **Next**.

Step 2: Modify plug-in selection

1. Select the **System State** check box.
2. Click **Next**.

Step 3: Apply changes

On the Summary page, click the **Apply requested changes** button, and then click **Next**.

Step 4: Close the Plug-in Installer

Click **Finish** to close the Plug-in Installer.

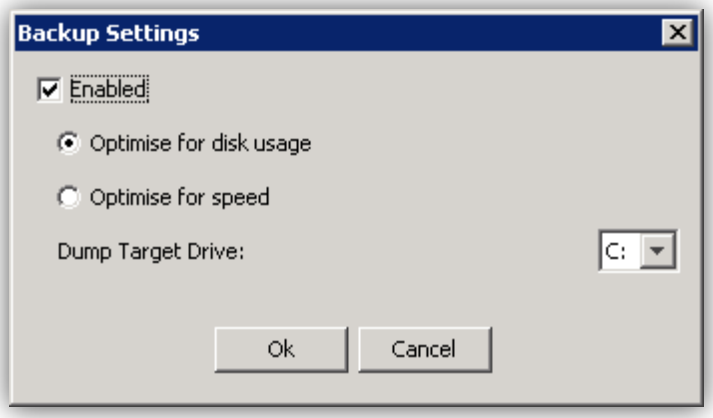
System State (using WSB) for Windows 2008 and later

Notes:

- *On a new Windows Server 2008 R2 installation, Windows Server Backup Features are not installed by default. To install Windows Server backup and recovery tools, follow the instructions as specified by Microsoft: http://technet.microsoft.com/en-us/library/cc732081.aspx.*
- ***Space requirement for Optimise for speed option:** Because the WSB plug-in splits the VHD into separate files when the **Optimise for speed** option is selected, the drive where the System State backup is stored needs to have enough space for two copies of the System State backup. For example, if the System State backup is 8 GB, a drive with at least 16 GB of space is required.*

Configuration

1. On the **Tools** menu, point to **Plug-ins**, and then click **System State (using WSB)**.
2. In the **Backup Settings** dialog box that appears, select the **Enabled** check box.



3. The **Optimise for disk usage** option is selected by default. This ensures that the plug-in only uses as much disk space as the VHD, plus a small amount for workspace (potentially as large as the largest file in the VHD). Select **Optimise for speed** if disk space is not an issue and you would like to improve the backup speed.

   Note: Optimise for disk space reduces the disk space usage by between 30% and 50%.

4. Select a dump target drive.

   Note: A System State backup can be over 10 GB large. Ensure that you choose a drive with enough disk space.

5. Click **Ok**.

Backup

Once the plug-in is enabled, you can select other data to back up, and then schedule backups or initiate one manually by clicking the **Backup** button on the toolbar.

Warning: *If installed on a Windows 2008 server, the plug-in will also back up Remote Installation server images. These are included in the backup selection and can inflate the backup significantly.*

Tip: *While the backup is in progress, it is useful to monitor its status in detail. To do this, open a Command Prompt window and run the following command:*
`Wbadmin get status.`

Note: *The plug-in will abort the backup if it runs out of disk space.*

Restore process

To restore the System State via WSB, you need to restore the System State data to its original location and then launch the Windows Server Backup restore process via the command prompt.

To restore System State data:

1. In the Backup Client, click the **Restore** tab.
2. Under the System State Backup target drive node, navigate to the **WindowsImageBackup** folder.
3. Right click the folder name, and then click **Include**.
4. Click the **Restore** button on the toolbar.
5. In the **Save files in** area of the **Restore Options** dialog box, select **Original location**.
6. Click **Ok**.
7. Once the contents of the **WindowsImageBackup** files are restored to their original locations, you can invoke the Windows Server Backup tool to complete the restore process.

To launch the Windows Server Backup restore process:

1. In Windows Explorer, navigate to:
   <*System State Backup target drive*>\WindowsImageBackup\<*Machine Name*>\SystemStateBackup.
2. Open the **restore.txt** file and follow the instructions contained therein.

System State (using NTBackup) for operating systems prior to Windows 2008

The MOUNT10 System State plug-in enables you to back up a collection of system-specific components as a unit to a target directory that is automatically included in the daily backup routine. These components include the following (depending on the operating system):

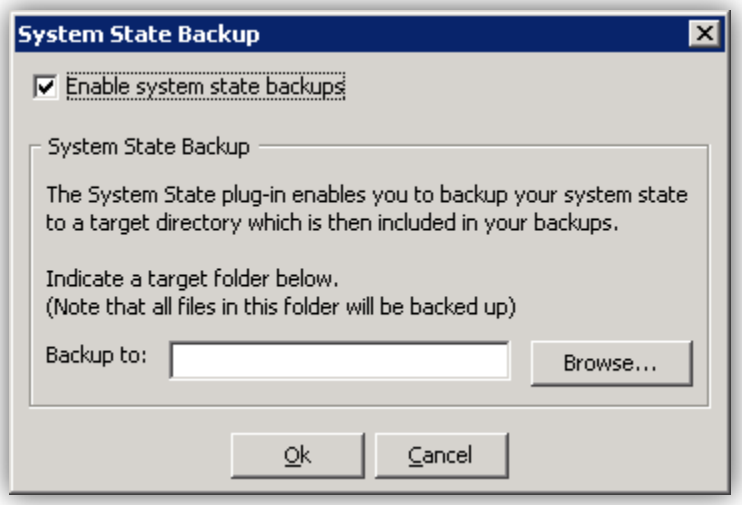
- Boot files, including system files, and all files protected by Windows File Protection (WFP)
- The registry.
- COM+ Class Registration database
- Active Directory
- SYSVOL directory

This plug-in is included in the SE installer. If it is not installed, run the MOUNT10 Plug-in Installer and select the **System State** plug-in. After the installation, open the SE Backup Client application window.

Note: This plug-in is used for Windows Server 2003 only.

Installation and configuration

Windows Server 2003


System State Backup
Enable system state backups
System State Backup
The System State plug-in enables you to backup your system state to a target directory which is then included in your backups.
Indicate a target folder below.
(Note that all files in this folder will be backed up)
Backup to:
Browse...
Ok
Cancel

1. On the **Tools** menu, point to **Plug-ins**, and then click **System State**.
2. In the **System State Backup** dialog box that appears, select the **Enable System State backups** check box.
3. A local target folder is required to create the System State backup. Type the path to a folder in the **Backup to** box or use the **Browse** button to specify it, and then click **OK**. If the target folder does not exist, the SE Backup Client will display a message asking if it should create the folder. Click **Yes**. This folder will be included in the backup selection list automatically.

The System State plug-in is initiated at the beginning of each backup and uses Windows Backup and Recovery tools to create the backup file. SE continues with the rest of the backup procedure after the System State backup has been saved in the specified target folder.

Restore process

Windows Server 2003 (complete recovery):

1. Click the **Restore** tab in the Backup Client.
2. Expand the backup date folder to restore from in the left-hand pane and restore the **sysstate.bkf** file located in the target folder.
3. Open the Windows Backup and Recovery application (**Start > All Programs > Accessories > System Tools > Backup**).
4. If the Restore Wizard does not appear by default, click **Restore Wizard** on the **Tools** menu. In the **Restore Wizard**, click **Next** to proceed to the **Backup or Restore** step.

Backup or Restore Wizard
What to Restore
You can restore any combination of drives, folders, or files.
Double click an item on the left to see its contents. Then select the check box next to any drive, folder, or file that you want to restore.
Items to restore:
Browse...
File
sysstate.bkf created 2
System State
Backup Identification Label
sysstate.bkf created 2010/01/15 at 03:...
< Back
Next >
Cancel

5. Select **Restore files and settings**, and then click **Next**.
6. Browse to the restored **sysstate.bkf** file. (The default restore location is C:\SystemState.)
7. In the left-hand pane, expand **File > sysstate.bkf created**, and then select the **System State** check box.
8. Click **Next,** and then click **Finish** to complete the Restore Wizard.

5. VSS

MOUNT10 makes use of the MS Volume Shadow Copy Service (VSS) to back up open files like your Outlook PST file, which is just a fraction of what VSS can do. The VSS plug-in utilises VSS on a much more advanced level by allowing you to protect any VSS-enabled database and application available on your server with a single plug-in; without the need for a database dump.

MOUNT10 VSS support

MOUNT10 supports the following applications/databases through the VSS plug-in:

- Exchange 2003
- Exchange 2007
- Exchange 2010
- Exchange 2013
- MS SQL 2005
- MS SQL 2008
- MS SQL 2012
- Hyper-V

VSS explained

Please note that this explanation will only focus on functionality related to databases, even though VSS is not limited to databases. VSS (Volume Shadow Copy Service) consists of three basic components:

1. **Writers (e.g. MSSQL)**
   It is the responsibility of each database vendor (MS SQL, Oracle, Exchange, etc.) to develop a VSS writer which will allow a requestor (see below) to back up the data without having to understand the exact inner workings of the database engine. The writer ensures data consistency and provides a safe way to back up the data, even while the application or database is still running. It provides a common backup interface that is similar across all databases, regardless of the vendor. Using writers is a way to ensure that the database vendor controls the data access, not an outside party.
2. **Requestors (e.g. MOUNT10)**
   A requestor initiates the VSS process. The requestor uses a generic set of instructions to initiate the VSS process and read data from the database. The instructions are the same regardless of the database being backed up.
3. **Providers (e.g. Microsoft Windows)**
   The provider is the interface to the point-in-time imaging capabilities. An in-depth discussion of providers is not needed for the purpose of this document. It is more important to understand the Writer and Requestor.

MOUNT10 VSS plug-in explained

The VSS plug-in is a "Requestor" that (in theory) can back up any database or service that has a VSS writer. These would include MS Exchange and MS SQL to name a few. In short, it works like this:

1. During the first backup, the VSS plug-in connects to the VSS writer of the database, reads all the data and compresses it to the **ToBackup** folder from where it is transmitted to the Storage Platform - **no database dump is done**.
2. After the backup, the data that has been sent to the Storage Platform is moved from the **ToBackup** folder to the cache.
3. For subsequent backups, the data in the cache is compared to the database data as it is being read by the VSS plug-in, to work out patches which are again stored in the **ToBackup** folder.
4. The patches are transmitted to the Storage Platform.
5. After transmission to the Storage Platform the cache is updated by applying the patches to the files in the cache.
6. Repeat from step 3.

Notes: The VSS plug-in sometimes picks up a System State writer. This writer is not supported and should not be used. For System State backup and restore, use the System State plug-in.

It can be seen that with the VSS plug-in, databases are treated as large files with no need to dump them separately. If Delta Blocking is used, the disk space requirements are further reduced (sometimes at the expense of larger backups).

Advantages

- Makes use of a generic set of instructions. So as new Writers are developed for databases, MOUNT10 should be able to back them up via the VSS plug-in.
- NO DUMP SPACE needed. The VSS plug-in reads the data directly from the database, without the need to make a database dump.
- The backup should be much quicker since data is not first dumped and then patched and compressed.

Disadvantages

- Not all the features that are provided in the existing MOUNT10 plug-ins are available in the VSS plug-in (for example to use an Exchange recovery group).

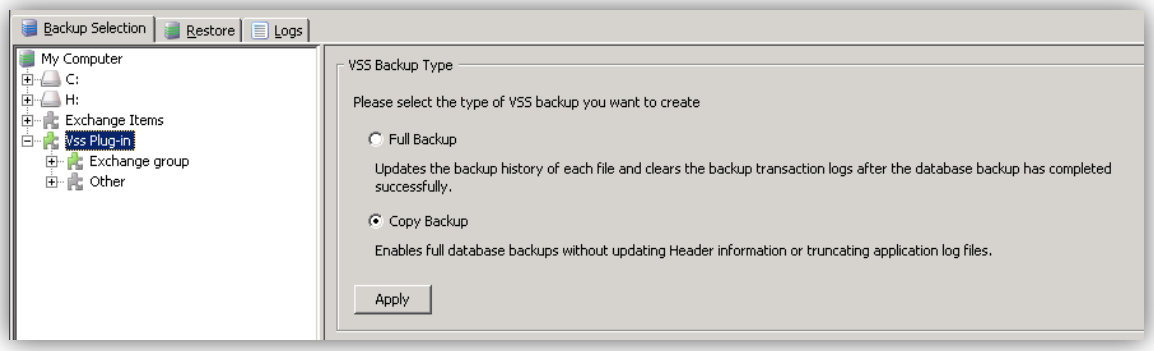
Installation and configuration

Note: The VSS plug-in can only support VSS-enabled databases, applications and files on the local machine where it is installed.

Run the MOUNT10 Plug-in Installer and select the **VSS** plug-in to upgrade the SE Backup Client with the plug-in. After the upgrade, open the MOUNT10 Client.

You will note a new entry in the left-hand pane, called **VSS Plug-in**. The VSS plug-in will automatically display all the writers available on the server. If you do not see the expand option (+) next to the **VSS Plug-in** node, right-click the node, and then select **Refresh** on the shortcut menu that appears.

When you select the **VSS Plug-in** node, the VSS Backup options display in the right-hand pane.



Select the type of backup you wish to perform: **Full Backup** or **Copy Backup**.

Full Backup

Following a Full Backup, the backup history of each file will be updated and, in the case of Exchange writers, the backup transaction logs will be truncated.

Warning: *If employing other backup/archiving processes in addition to MOUNT10 that require full backup transaction logs (e.g. Exchange tape backup), it is recommended that you use* ***Copy Backup*** *instead, as Copy Backups retain full transaction logs.*

Copy Backup

Copy Backups leave the backup history of each file and the application logs as they were before the backup. This is recommended if using additional backup/archiving processes that require full backup transaction logs.

Warning: *If both the SQL database and Exchange server are on the same machine, the Full/Copy setting will apply to both.*

Browse through the available writers and select the items as you would select folders in the left-hand pane. Once you have made your selection, you can click the **Backup** toolbar button to initiate the first VSS plug-in backup, as described earlier in this document.

Note: *If the MS SQL Server item does not appear in the Backup Selection tree under the VSS plug-in, ensure that the SQL Service VSS Writer service is running.*

Tip: *If selecting the Microsoft Exchange Writer, you have the option to bypass the database integrity check. Please note that integrity checking is recommended by Microsoft but may slow the backup preparation process down significantly. It should only be skipped if it is certain that the files are in a good state and can be used for recovery.*

Restoration of databases using the VSS plug-in

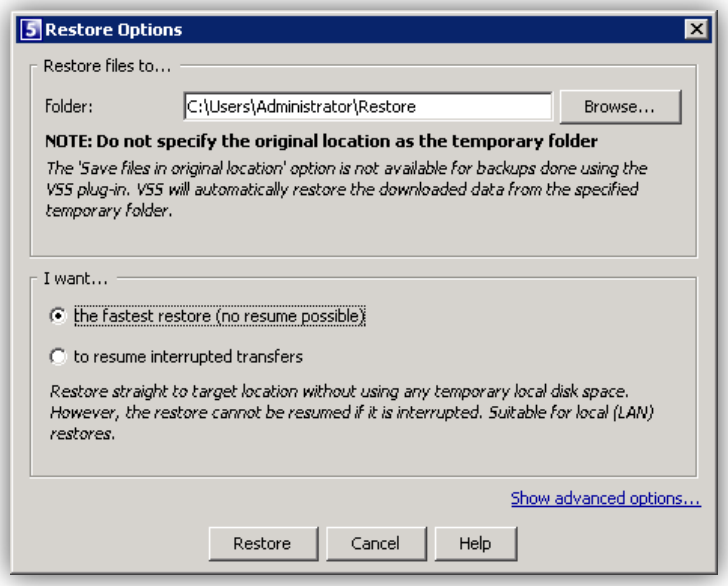
Open the **Restore** tab, select the required databases and files in the VSS Writers section and then click on the **Restore** button in the toolbar.

The **Restore Options** dialog box will appear. On the **General** tab, you will note that you cannot restore to the original location when selecting any items from the VSS Database section as VSS will do that once the data is restored. Select a temporary restore location using the **Browse** button or enter a path to on in the **Folder** box.

Warning: *VSS restores can overwrite current live data. During a restore, data is downloaded from the Storage Platform and written to a temporary location on the hard drive. This location is a folder that will temporarily hold the restored data, before it is streamed back into the database from where it was initially backed up.*

Therefore, take care when doing test restores as they will overwrite any current data in the database with the data from the restore. Naturally, if you restore only a certain section of data (i.e. one information store), the rest of the database will not be affected.

The only way to avoid this scenario is to restore to a different machine, although some other components like Active Directory may need to be set up first.


Restore Options
Restore files to...
Folder:
C:\Users\Administrator\Restore
Browse...
NOTE: Do not specify the original location as the temporary folder
The 'Save files in original location' option is not available for backups done using the VSS plug-in. VSS will automatically restore the downloaded data from the specified temporary folder.
I want...
the fastest restore (no resume possible)
to resume interrupted transfers
Restore straight to target location without using any temporary local disk space. However, the restore cannot be resumed if it is interrupted. Suitable for local (LAN) restores.
Show advanced options...
Restore
Cancel
Help

Once you have configured all the relevant restore options, click **Restore**.

Warning: *Restoring the SQL Server master database using the SQL/MSDE Writer sometimes fails and causes errors. When performing a restore, it is recommended that you exclude the master database and restore it individually as described in the following links:*

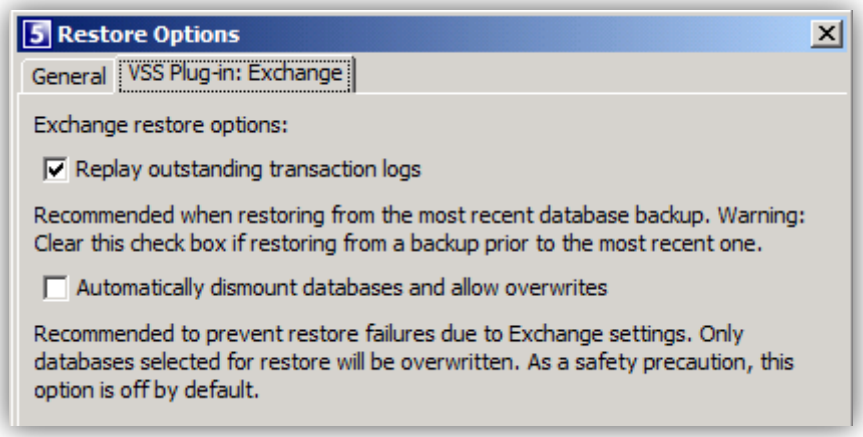
- *http://msdn.microsoft.com/en-us/library/aa173557%28v=SQL.80%29.aspx*
- *http://msdn.microsoft.com/en-us/library/aa173515%28v=SQL.80%29.aspx*

The SE Backup Client will restore the files to the specified location and VSS will thereafter pick up the files and restore them to the applicable database.

Note: *For MS SQL Server restorations, if you make your restore selection on the file level, the VSS plug-in will not be used to restore the entire database. Instead, the files that you have selected will only be restored to the location that you specified. You will have to attach the files to the database yourself.*

Example: Restoration of Microsoft Exchange Writer using the VSS plug-in

1. Open the **Restore** tab, expand the **VSS Writers** node, and then select the **Microsoft Exchange Writer** node.
2. Include the writer by right-clicking the node, and then selecting **Include** on the shortcut menu that appears.
3. Click the **Restore** button in the toolbar. The **Restore Options** dialog box will appear.
4. On the **General** tab, you will note that you cannot restore to the original location when selecting any items from the VSS Database section as VSS will do that once the data is restored. Select a temporary restore location using the **Browse** button or enter a path to on in the **Folder** box.
5. Click the **VSS Plug-in: Exchange** tab and configure the restore options.


Restore Options
General
VSS Plug-in: Exchange
Exchange restore options:
Replay outstanding transaction logs
Recommended when restoring from the most recent database backup. Warning: Clear this check box if restoring from a backup prior to the most recent one.
Automatically dismount databases and allow overwrites
Recommended to prevent restore failures due to Exchange settings. Only databases selected for restore will be overwritten. As a safety precaution, this option is off by default.

Tips:

- *It is recommended that **Replay outstanding transaction logs** be enabled when restoring from the most recent database backup. Please note that you need to disable this option if restoring from a backup prior to the most recent one.*
- ***Automatically dismount databases and allow overwrites** is disabled by default (as a safety precaution) but enabling it is recommended to prevent restore failures due to Exchange settings. Only databases selected for restore will be overwritten.*

6. Click **Restore**.

Backup and restoration of Hyper-V virtual machines

> ***Note:*** *MOUNT10 only supports the backup and restoration of Hyper-V virtual machines on Windows Server 2008 R2.*

It is possible to back up and restore Hyper-V virtual machines (VMs) using the MOUNT10 SE Backup Client. To back up, follow these steps:

1. Install the MOUNT10 SE Backup Client and the VSS plug-in.
2. In the Backup Client's **Backup Selection** tab, navigate to the VSS plug-in node and expand the **Hyper-V Writer**.

   > ***Note:*** *It might be necessary to register the Hyper-V VSS Writer before it becomes visible in the Backup Selection tab.*

3. Include the VMs that you want to back up and begin the backup process.

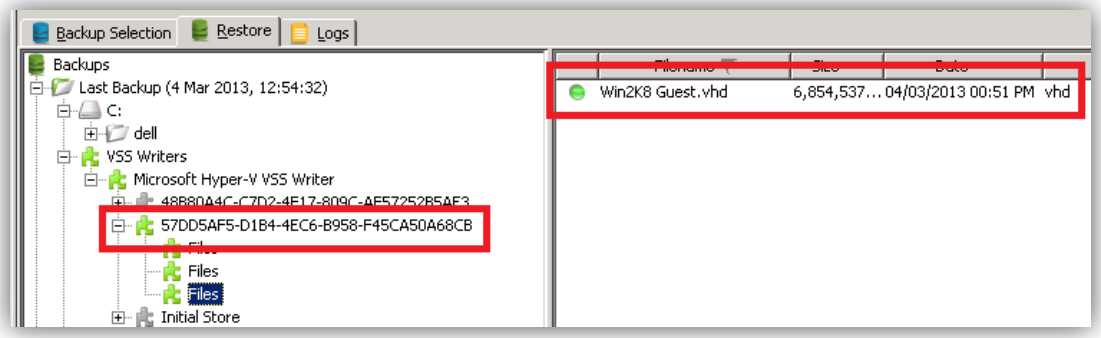
You have now successfully backed up Hyper-V virtual machines, including their hardware configuration settings.

To restore, follow these steps:

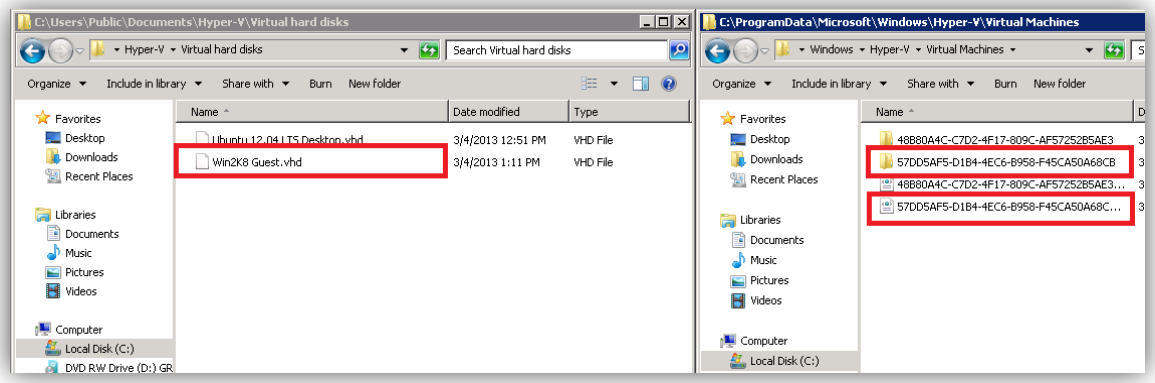
1. In the Backup Client's **Restore** tab, select the VMs that you would like to restore and begin the restore process. After the restore has taken place, the restored files will be moved back to their original location.
2. The VMs now appear in the Hyper-V management console. However, you will be unable to start the restored VMs until you change their associated permissions:

   In **Windows Explorer**, navigate to the location of the restored VMs. The restored files will have the associated Virtual Machine's hexadecimal ID (and VHD file names), which can be viewed under the VSS writer in the Restore tab.

For example:



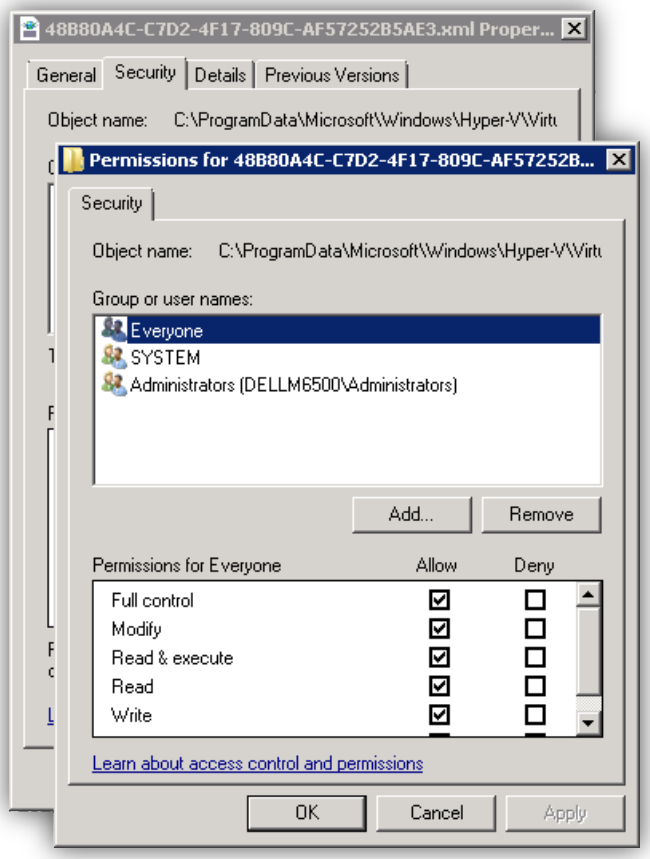
Note: By default, Hyper-V keeps the Virtual Hard Disk (VHD) and configuration files in different locations. The defaults locations are C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\ and C:\Program Data\Microsoft\Windows\Hyper-V\Virtual Machines\, but these can be configured for other locations.



For each restored file or folder:

a. Right-click the file.
b. Click **Properties**.
c. Navigate to the **Security** tab.

d. Ensure that all users have access to the file and that **Allow** is ticked for all permissions. You can add the **Everyone** group with all permissions allowed to accomplish this.



e. Click **OK**.

f. Click **OK**.

Note: *You may notice a small lock icon on the restored files, but this is not always displayed.*

The VMs' hardware configuration settings are restored with the VM. You can now start the restored VMs using the Hyper-V management console.

Backup and restoration of Exchange 2010 DAGs

MOUNT10 can be configured to support the backup and restoration of Exchange 2010 Database Availability Groups (DAGs).

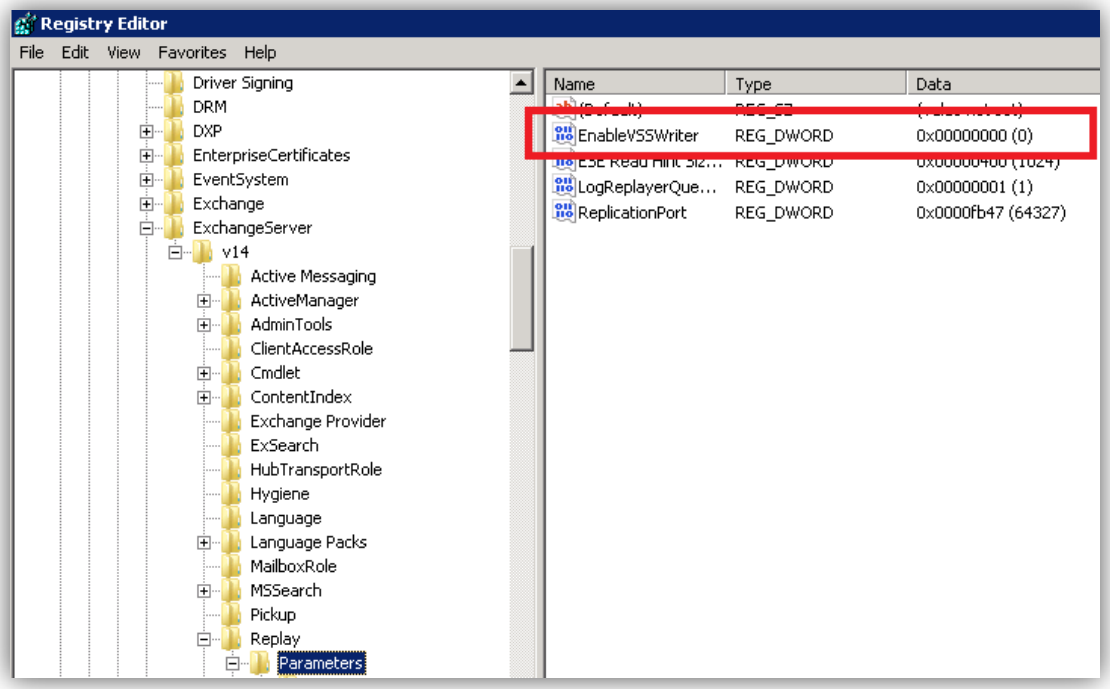
Configuration

To back up or restore Exchange 2010 DAGs using MOUNT10, you will need:

1. SE Backup Client
2. System State plug-in
3. VSS plug-in

Configuration steps

1. Install the SE Backup Client and configure System State backup on the appropriate Domain Controller as this will be required in a Disaster Recovery scenario.
2. On each Exchange Server, disable the Exchange Replica Writer (VSS writer) and restart the Exchange Replication service as detailed in this article: http://exchangeserverpro.com/event-id-2137-windows-server-backup-completed-warnings-exchange-2010-mailbox-server.
3. Using the Registry Editor, go to: **HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\ExchangeServer\V14\Replay\Parameters** and add a **DWORD** entry of "**EnableVSSWriter**" with a value of **0** (zero).



4. Using PowerShell, restart the Exchange Replication service as follows:
   `[PS] C:\>Restart-Service MSExchangeRepl`
5. Install an SE Backup Client and VSS plug-in on each Exchange DAG member.

Note: *After the reboot of an Exchange machine, it could happen that the Exchange Information Store or related storage does not start up in a timely enough fashion. As a result, the VSS plug-in is unable to back up the Exchange databases.*

To ensure that this does not occur, set the SE Backup Client service to be dependent on the Exchange Information Store service. This will ensure that the SE service only starts up after Exchange has successfully started up.

Backup

On each Exchange DAG member, open the SE Backup Client and include the Exchange Writer node for backup.

When backups run, only mounted databases (i.e. the active ones) will be backed up, and the logs transacted. Any healthy (i.e. standby) databases will be ignored. After the logs are transacted, native DAG replication will replicate the transaction to the other members.

If a server has no active databases, only the Exchange writer details will be backed up. Typically, this backup would be less than 2 KB in size. If a database is promoted to "mounted" status, it will be included in the selection and added. If a database is demoted to "healthy" status, it will be deselected and removed.

Note: *As databases are promoted or demoted, they will be added or removed from the backup selection on each Backup Client. This means that they will be added as full files when promoted, which will impact data transmission.*

If the database status does not change, the active databases will patch as normal. The display status within the Backup Client's GUI may not refresh within a timely fashion, although the databases do back up successfully (the status may refresh after the backup runs, with demoted databases disappearing from the writer).

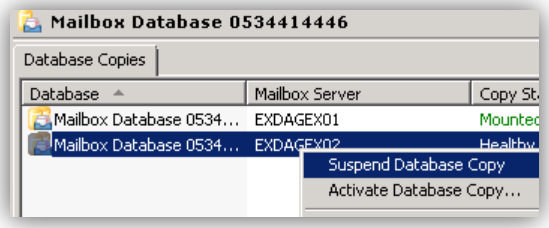
Restore

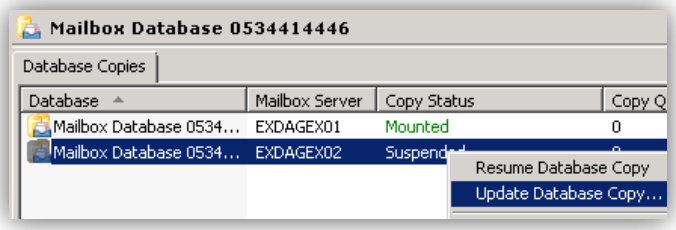
In a DR scenario the Active Directory environment should first be restored and the Exchange databases reinstalled. Thereafter, they should be reconnected to the DAG via Active Directory exactly as with a conventional Exchange restore.

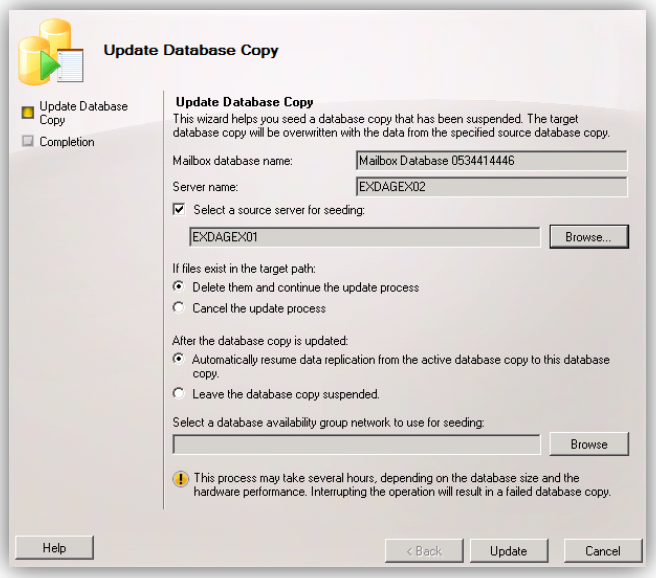
Databases can be restored to mounted (i.e. active) copies, rather than to the healthy copies which remain invisible to VSS. It is recommended to restore these to the last active peer from which they backed up.

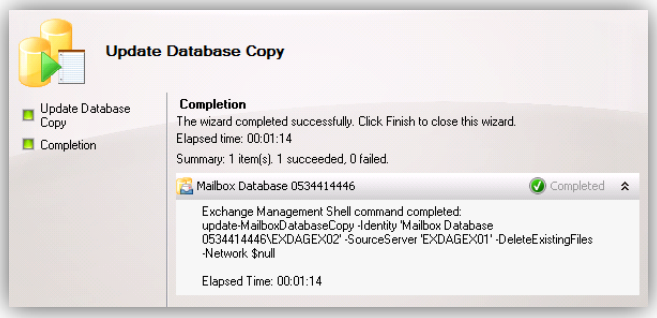
Note: *Restores operate through the normal VSS method, with the normal settings recommendations applying for older database copies and so on.*

After restoring, in a non-DR scenario, it may be necessary to force the standby copy to synchronise. If the standby copy database shows as healthy it should first be suspended, and then resumed or updated.






Update Database Copy
Update Database Copy
Completion
Update Database Copy
This wizard helps you seed a database copy that has been suspended. The target database copy will be overwritten with the data from the specified source database copy.
Mailbox database name:
Mailbox Database 0534414446
Server name:
EXDAGEX02
Select a source server for seeding:
EXDAGEX01
Browse...
If files exist in the target path:
Delete them and continue the update process
Cancel the update process
After the database copy is updated:
Automatically resume data replication from the active database copy to this database copy.
Leave the database copy suspended.
Select a database availability group network to use for seeding:
Browse
This process may take several hours, depending on the database size and the hardware performance. Interrupting the operation will result in a failed database copy.
Help
< Back
Update
Cancel


Update Database Copy
Update Database Copy
Completion
Completion
The wizard completed successfully. Click Finish to close this wizard.
Elapsed time: 00:01:14
Summary: 1 item(s). 1 succeeded, 0 failed.
Mailbox Database 0534414446
Completed
Exchange Management Shell command completed:
update-MailboxDatabaseCopy -Identity 'Mailbox Database 0534414446\EXDAGEX02' -SourceServer 'EXDAGEX01' -DeleteExistingFiles -Network $null
Elapsed Time: 00:01:14

If updating, the database will be replicated in full from the active database, whilst the resume might only be successful if the copy has been deliberately suspended and the database remains in sync.

Note: *Updating is effectively reseeding, which Microsoft warns can take several hours, but may be the only successful method.*

If the standby "healthy" copy is not fully synchronised the restored mounted database (i.e. the active one) will not truncate logs on subsequent backups, and may fill up the disk. You are advised to monitor these for a short period after the restore and ensure that synchronisation is operating correctly.